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THE CONTEXTUAL NATURE OF ENTERPRISE SOCIAL NETWORKING: A MULTI CASE STUDY COMPARISON

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Abstract

Enterprise social networking (ESN) is a relatively new phenomenon and not yet fully understood. An important reason for this lies in the fact that ESN are built on malleable technologies that do not lend themselves to immediate forms of workplace usage determined or prescribed by their features. Rather, their potential only manifests when people make sense of and incorporate them into their day-to-day work practices. In this paper we consolidate three years of case study research into ESN adoption and use. We are able to demonstrate empirically the contextual nature of ESN as an emergent phenomenon that takes on different forms in different organisational contexts. Drawing on this data we derive a theory of ESN usage, which employs a set of use cases to provide a better picture of the possibilities of ESN when appropriated into team, project or large enterprise contexts. This allows reflecting on ESN as a contextual phenomenon and social infrastructure and builds a basis for further research.

Keywords: Enterprise Social Networking, Social Media, Appropriation, Case Study, Use Cases.

1 Introduction

Enterprise social networking (ESN) is the result of applying technologies that emerged on the public Internet within the workplaces of organizations to facilitate work-related communication and collaboration (e.g. McAfee, 2009; Stocker et al., 2012). ESN platforms, such as Yammer, Communote or Jive replicate many of the features that are well-known from platforms such as Facebook or Twitter.

At the same time, and unlike many other software systems that serve a dedicated purpose, ESN are malleable technologies (Richter & Riemer, 2013) that do not lend themselves to immediate forms of usage determined or prescribed by their features. This implies that it is hard to predict how and in what form ESN will be put to use when rolled out to a particular organizational context. Rather, ESN adoption needs to rely on experimentation and sense-making by its users, a process that takes time and is open-ended, in that the potential of ESN only manifests when people actually incorporate them into their day-to-day work practices. Conversely this means that ESN can only be understood for what they are through such emerging uses in context. Or in other words, we need to understand how ESN are used in order to fully understand what ESN are and what role they can play in organisations.

To this end, in this paper we set out to analyse and compare findings derived from a number of ESN cases across a range of organisational contexts. In doing so, we consolidate three years of case study research into ESN adoption and use. Our study is based on a comparison of the results of a number of studies that have all applied the same analysis technique to catalogue emerging use practices in various case context; these studies have been published elsewhere (Riemer & Richter, 2010; Riemer et al., 2011; Riemer et al., 2012; Riemer & Scifleet, 2012). In essence, our aim is to derive a theory of ESN use. We employ an exploratory case study design to derive a catalogue of ESN use cases as the basis of our theory that outlines contextual ESN usage profiles.

The contribution of our paper is threefold. Firstly, we derive from the cross-case analysis a consolidated catalogue of eleven ESN use cases with detailed descriptions and examples. This use case catalogue is the first of its kind to provide a structured overview of the variety of possible applications of ESN and thus a better understanding of the ESN phenomenon in general. It provides the ingredients for our theory. Secondly, we present our theory in the form of a structured framework of ESN usage in different organisational contexts, namely team, project, and large enterprise contexts. Given its nature as a framework for making sense of the ESN phenomenon, our theory can be classed as a type 1 theory, a theory for analysing, in Gregor's typology (Gregor, 2006). Thirdly, our findings allow us to reason on and discuss with empirical data the openness and interpretive flexibility of ESN and their nature as social infrastructures.

Our study has important practical implications. We derive a better understanding of ESN technologies and their benefits for organisational practices and provide a better picture of the manifold possibilities of ESN in supporting communication, collaboration and knowledge work. Thus, our study provides useful ESN profiles that outline which use cases are helpful in different contexts, which helps decision makers to derive their own contextual understanding of ESN.

2 Research Background

In the wake of what has been termed the Web 2.0, a new kind of Internet platform has emerged: social platforms such as Twitter and Facebook provide a set of easy-to-use features that encourage participation, social networking and the exchange of short messages (e.g. Huberman et al., 2009). Given the widespread use in the public domain social platforms have made fast inroads into organisations. It is widely assumed that they will improve information sharing, communication and group work within a company (McAfee, 2009). Consequently, early research in the field has investigated the potential of these platforms and the various associated features (e.g. Ip and Wagner,

2008; Danis and Singer, 2008; DiMicco et al., 2008). Many of these studies explore particular aspects, including the type and volume of contributions, the relationship between consuming content and contributing, the quality of user generated content, user motivations, the benefits for the individual and the organization or the perceived barriers or rules of use (e.g. Grace, 2009; Holtzblatt et al., 2010; Stocker et al., 2012).

The focus of this study is on the phenomenon of enterprise microblogging (EMB), which has been increasingly discussed in the literature (e.g. Riemer & Scifleet, 2012; Zhao & Rosson, 2009) and marketed by platform providers under the more general term enterprise social networking (ESN). In essence, microblogging is said to enable new forms of lightweight communication, where users share and broadcast small chunks of information about themselves, their thoughts, or anything else of interest (Riemer et al., 2010). Examples of corresponding platforms are Yammer, Communote or Jive, all of which show tendencies to evolve into more fully-featured ESN platforms integrating short messaging with wikis, document management and social networking features such as people profiles.

While ESN can certainly be described as a set of features, we have argued elsewhere that such descriptions are not very useful for understanding the potential and role of such platforms for the adopting organisations, a characteristic which we have termed *Nutzungsoffenheit* (Riemer et al., 2010) or malleability (Richter & Riemer, 2013). *Nutzungsoffenheit* is “a form of openness, whereby the technology and its set of features do not precipitate its forms of usage (...). *Nutzungsoffenheit* means that the true nature and potential of such technologies does only manifest when people make sense of and incorporate them in their day-to-day work routines.” (Richter & Riemer, 2009). We have further argued that such technologies need to be appropriated by their users in a particular context, thereby becoming part of different practices when compared across contexts. Users need to explore, experiment with and thus figure out how to “place” these platforms within their local work practices (Riemer & Johnston, 2012).

As the potential and likely effects of ESN in practice cannot be deduced from a decontextualised analysis of its features, case studies are needed to expose the nature of ESN in facilitating different use practices across different contexts. However, so far no comprehensive, empirical study exists that compares ESN across cases to provide a structured overview with a view to inform future research and ESN adoption in practice alike. This paper presents such an analysis. With the data used in this study we are able for the first time to demonstrate empirically the bandwidth of the ESN phenomenon in different contexts, but also how ESN becomes interpreted and appropriated similarly in similar contexts. This allows us to derive a theory of ESN usage in the form of a framework of contextual ESN usage profiles. Based on our theory we reflect on ESN platforms as digital infrastructures (Tilson et al., 2010) that do not solve a predefined problem, but open a space for social activity and thus will only become defined through appropriation and use in context.

3 Study Design: Cross-case Analysis for Theory Development

In this study we compare and contrast findings from five in-depth case studies on ESN usage practices in order to develop our theory of contextual ESN usage. The individual case studies have been conducted over the past three years together with various co-authors (see table 1 for an overview). All of these studies applied the same general research design and analysis methods, which makes the findings from the studies comparable and suitable for our purpose. Since it is our aim to derive a theory of contextual ESN usage, our analysis is based on actual ESN usage data. Consequently, we have applied genre analysis as our main method to analyse a sample of the actual communication exchanged on each of the ESN platforms in the five cases. The resulting genre repertoires are thus a reflection of the ESN use practices in these various cases. This allows us to derive a structured understanding of contextual ESN usage as the basis of our theory. We would like to note that in each case we also conducted initial face-to-face interviews to gain familiarity with the case context. However, we do not draw on any interview data in our analysis, since such self-reported data does not allow us to derive an understanding of ESN use with the same precision as actual usage data does. The

interviews only provide us with a background understanding of the cases necessary for interpreting our data. In the following, we provide an overview of the genre analysis method and data analysis procedures, before we provide a brief overview of the data sampling in each of the cases.

3.1 Genre Analysis: Identification of ESN Use Practices

Communication genres are “socially recognized types of communicative actions [...] that are habitually enacted by members of a community to realize particular social purposes.” (Yates et al. 1999, 84) Genres develop over time as a response to recurring communication situations and in turn function as socially agreed upon templates on which group members routinely draw when they communicate with each other (Orlikowski & Yates, 1994). Genres capture meanings and reflect practices of the communities in which they exist (Yates et al., 1999). Consequently, genres are useful to describe the communication routines of social groups and hence the way they normally engage with each other. Genre analysis thus can serve as an instrument to understand the communication practices of a social group, because “in identifying and labelling genres we try to capture the gestalt of the various components of the communicative act.” (Kwasnik & Crowston 2005, 80). Communication practices in turn can generally be defined as a “routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, things and their use, a background knowledge in the form of understanding, know how, states of emotion and motivational knowledge” (Reckwitz 2002, 249). A practice understanding stresses the routinisation of communication; with regards to technology a practice view directs researchers’ attention to the technology-in-practice, i.e. the ways in which different people appropriate technology in particular times and places (Orlikowski & Iacono, 2000).

Communication technologies are appropriated over time and become embedded in emerging and situated communication practices, which are in turn reflected in the communication genres that structure this communication. Through identifying the set of genres a social group engages in we are able to provide a structured overview of their routine communication. With regards to ESN-based interaction we are thus able to show how ESN has been appropriated into a social practice and thus what roles it serves in a particular context. In order to identify communication genres, we need to specify how a genre can be recognized. What can be observed in context are the communication events people engage in during their daily routines, such as a post (a written utterance) in a communication stream. Conceptually, a genre is a class of communicative events; communication events in turn are instantiations of a genre (Swales, 1990). Thus, purpose is the primary criterion by which to identify communication genres (Askehave & Swales, 2001).

3.2 Data Collection and Analysis Methods

Data analysis was performed using the same analysis method and techniques in each of the cases. In all cases we had access to the actual communication data exported from the ESN platform. This data was accessible to the research team in different formats. In two cases (Communardo and IREKO, see table 1) the data was extracted from the platform (Communote) in .rtf-format and then loaded into and coded with atlas.ti. For every blog there was one rtf file. In the three other cases (Capgemini, Deloitte AU and NAB) the data was extracted from the platform (Yammer) in Microsoft Excel format, where one table row represents one message. Messages are generally identifiable by a set of meta data, such as message number, reply ID (if the message was in reply to another message) date stamp and the ID of the user who sent the message. Please note that all data sets were de-identified prior to analysis, with user names and personal information removed. The analysis of each data set was then carried out by one researcher with a second experienced researcher acting as a discussant. This analysis works as follows: After an initial phase of familiarisation with the data set through reading long passages of conversations, data coding is carried out in a bottom-up fashion. Starting with a small set of messages, each message is interpreted in the context of its conversation thread by assigning genres codes that label various purposes for posting a particular message into the ESN space. The genre codes emerge

through constant iteration. An initial set of genres is first discussed and agreed upon and further messages successively coded. Whenever a new genre candidate occurs it is compared to the existing genres. If it does not match these genre codes we create a new genre code. Consequently, all previously coded messages are reviewed and recoded with the new set of genres. Frequently genre codes are merged or split.

The result of this genre analysis is then a set of often around twenty single genres that are then further grouped into top-level genres. This genre repertoire is a reflection of how ESN has been appropriated in the case and the role it serves for the social group that is active on the platform. In other words this genre repertoire represents the use cases that emerged in a particular case. Because we derive these use cases through data interpretation bottom-up the (sub) genres that emerge in each of the cases are often slightly different and do not immediately match when compared across cases. However, a match exists between the top-level genres. Also, since we had access to all data sets we were able to slightly amend the various data analyses in order to ensure comparability; for example regarding whether or not non-work related messages are included in the genre set. The genre repertoires of the five cases and the corresponding percentage distribution of messages can be found in table 2.

	Communardo	IREKO	Capgemini	Deloitte AU	NAB
Case description	German software development company with 180 employees; work revolves around projects, heavy on team work; providers of the Communote platform.	Cross-disciplinary team of researchers at a German University in business and engineering. Umbrella project of individual initiatives.	World-wide consultancy business with 106,000 employees in 35 countries; work revolves around client projects with a focus on IT consulting projects.	Auditing, tax and IT consultancy business with 6000 employees spread across Australia. Work revolves around client projects with a range of service lines.	Major Australian Bank with more than 20,000 employees of which the large majority is active on the Yammer platform.
Data sample	Communication stream of one of the three software development teams (blogs)	2 months of communication within the IREKO blog stream	2 weeks of communication from the company-stream (and groups)	2 weeks of communication from the mature, company- stream (and groups)	2 weeks of communication from the, company-stream (no groups)
Messages analysed	648	883	1,196	1,809	2,901
Assigned codes	912	1,190	1,419	2,166	3,468
Codes per post	1.41	1.35	1.19	1.20	1.20
Proportion of replies	26%	47%	64%	65%	63%
Platform (overview)	Communote is a browser-based, intranet-hosted platform that revolves around the concept of multiple blog streams (groups) to which users can be added on a case-by-case basis. A user's start page shows a synthesis of postings from the user's blog streams. For example, in order to read the messages associated with a project, users can simply select the respective blog and read through the emerging stream of messages.		Yammer is a browser-based Internet-hosted platform, organised around the concept of networks, with one network typically representing one company. Users can join by registering with their corporate email address, which serves as their identifier. Yammer utilises both a network-wide stream and contextual blog streams organised into groups created by network members. Yammer is based on the "follower"-principle, i.e., users can select users and are then constantly informed about their platform activities as they happen. Whenever new users join a company network they initially subscribe to the message streams of all users within the network.		

Table 1: Case overview and sampling

3.3 Data Sampling in the five Case Studies

Table 1 shows that our analysis builds on a cross-case data set. Whereas in the IREKO case a team of only about 20 persons has appropriated the ESN, in three cases the platforms have several thousand users. With thousands of posts per month in these cases, we suitably analysed samples of 2 weeks of communication. For Communardo and IREKO we extended the unit of analysis to two months or whole projects respectively. It needs to be pointed out that two different platforms were used across the five cases: Communote and Yammer. While similar and grounded in the same short messaging principles they also have some differences, most notably regarding the role of groups. Whereas Yammer features an 'All Network' stream of messages where groups are used to create 'break-out' areas for teams and project, in Communote groups (called blogs) feature more prominently. In Communote any communication is structured by membership in such groups. In Communardo an equivalent of an 'All Network' stream existed alongside specialized group blogs, while all communication in IREKO happened in one stream.

4 Findings: Enterprise Social Networking Use Cases

In this section we introduce the eleven top-level genres we identified from our cross-case analysis, which represent a list of emergent use cases of ESN. We further show how their proliferation differs across the five case companies introduced above.

The following list of use cases is presented in alphabetical order; it includes descriptions and typical quotes from the case data.

Discussion and Opinion: Users discuss general corporate matters, current affairs, politics, industry-related news, etc in the ESN. People voice their opinions, agree and disagree, ask for clarification and provide facts to further the discussion. This is done in order to learn about others, learn about what is important to others in the company, to position oneself in the group, to build relationships. What emerges from these discussions is the shared background that makes people see the world in similar ways, which is the foundation for all other communication and joint work to take place effectively.

"Wow - elections are expensive, inefficient and environmentally unfriendly. The 2007 federal election cost \$163 billion" (Deloitte) • "Invited by my employer to fill in 28 pages long (20 questions each) survey on 'New Way of Working'. That does not sound very new way to me." (Capgemini) • "As long as they offer a better service or better quality in general price isn't really an issue" (Capgemini)

Event notifications: In some cases the ESN is used to send information on upcoming events (workshops, webinars etc) that might be of interest to others. These messages typically contain a URL pointing to further information. The idea behind this is that users want to promote their own events, interest others in joining events or simply share information on events that they think are of interest to others.

"Tomorrow, Mendeley offers a Webinar." (IREKO) • "Looking forward to the Connecting Women Great Debate Tuesday 4th in the auditorium in Docklands starting at 12" (NAB) • "On 8th September 2010 Capgemini organizes another Cloud Computing Conference [...]" (Capgemini)

Idea generation: As a part of the idea generation practice the ESN is used to ask others for their input and ideas regarding a product or project specified by the message sender (such as in product development, organisational development, project organisation). For doing so, typically a user sends a call for ideas and multiple other users provide input, possibly accompanied by a brief discussion. In that way the wider user group is turned to for sourcing a wide range of different ideas and opinions, which often enhances the original scope of the project.

“Curious to know how we can make the [...] Yammer group more useful for those who have joined?” (Deloitte) • “Adaptive change requires conflict. How are you engaging opponents of change in the system?” (NAB) • “@tls Idea: The barrier could be placed after entering the email address. Like it is already with [...]” (Communardo)

Informal Talk: The ESN also makes it possible to engage in informal, non-work related conversations (e.g. about sports events, hobbies and other general interests) or to post jokes and funny utterances. This is sometimes done in single posts, but more often in conversations that can be quite engaging at times. In doing so, users socialise with others and build relationships outside of work-related conversations. Typical messages in this category are:

“Congratulations on your baby. Wish you all the best!” (IREKO) • “THE PIES!!!” (Deloitte)

Information storage: Sometimes the ESN is used to store information for future reference for oneself or for others (such as IPs, logins, meeting minutes, links to internal documents). In that way the stream is used as a storage space, knowing that one can retrieve the information with the search feature in the future.

*Presentation of team goals (Checklist for Quality assurance) * conception: o Add UseCases ... (Communardo) • “The address for your new b&w printer is...” (IREKO)*

Input generation: The ESNs in our cases are frequently used to share various forms of external input with the wider group, such as URLs to information someone found on the Internet, newspaper articles, research studies or various files. When doing this, users want to share a discovery they made or provide others with interesting information, because they are aware of what others are working on and want to provide input or they want to raise awareness for certain topics (in the form of agenda setting).

“For a first view on Confluence 3.0: <http://confluence.atlassian.com/dashboard.action>” (Communardo) • “#Cloudcomputing The Digital Magazin reports <http://...>” (IREKO) • “Which country works the longest hours? <http://...>” (NAB)

Meeting organisation: The ESN is also sometimes used to organise meetings by negotiating dates and collecting agenda items from the meeting participants. In order to make meeting organisation inclusive and transparent an interactive discussion of meeting dates and collecting agenda items is taking place by posting into the stream (with tagging).

“This appointment is inconvenient. I would prefer 01.10. 3pm” (IREKO) • “Topics #jourfixe: coordination of...” (Communardo) • ““#workshop our next topic will be...” (IREKO)

Problem-solving: Users frequently draw on the ESN to ask others for help such as by outlining a specific problem or by asking others to find a resource necessary to solve a problem. In turn, other ESN members provide a solution, ask for more background information, discuss the problem, provide access to a resource (such as a document), offer their experiences, best practices, or the contact details of experts. By doing so an immediate work-related problem is often solved quickly. The following are typical messages in this category:

“it is worth us looking into how that occurred and what we can do to assist the customer and their patients.” (NAB) • “Here applies the following rule: ...” (IREKO) • “What can I do with RAD-Studio what I can’t do with Visual Studio?” (Communardo)

Social Praise: In order to share success stories or acknowledge the achievements of people to the wider group, users also use the ESN to thank others for doing something (e.g. providing information, or finishing a project successfully). This is done by referring to other users by name (or CC) providing a short positive acknowledgment. Sometimes, other users concur with the statement via reply posts.

“Thank you for an interesting mindmap and for sharing your experience with us.” (Capgemini) • “Good work!!!! Just saw the video on the intranet and thought: “hang on a minute, I know that face from yammer” ;)” (NAB) • “well done to Tran, Michel and Luy in putting something excellent together and thanks for investing a lot of their own time” (Deloitte)

Status updates: Social networks on the public web are often used to report what someone is currently doing. In the same way the ESNs in our study are used to notify others of what is going on in their work environment regarding projects and initiatives they are involved in or events and meetings they participated in. This is in order to create awareness in others for what is going on and to present oneself within the wider user group. To this end a user sends a simple status update message into the stream.

“I have configured a test installation on the #com252 and actualised the #searchindex. Besides I try to document the proceeding in the wiki. /Wiki-URL” (Communardo) • “[I am] In my daily update meeting with my partner in Waldorf” (Capgemini) • “Leaving for the ITS Conference today.” (Deloitte)

Work coordination: Sometimes the ESN is used to delegate tasks to others, post requests for interest on tasks that need to be staffed, or ask for task assignments and offer spare capacity. This is typically done by one user posting a short update or delegation post, or asking specific others for updates on their tasks. Moreover users assign tasks to one or a few others and ask the group if they want to be assigned a task. The reason to do this is the aim to coordinate the day-to-day workflow, to create awareness of how the group’s work progresses and to make task assignments transparent for the group.

“Finished available here:...” (Communardo) • “@stu Can you please give Jon access to the (KDF). Thanks!” (Communardo) • “Further proceeding with the tool?” (IREKO)

Having provided and illustrated a complete list of all communication genres we found across the five cases we analysed, table 2 gives an overview of the distribution of those use cases in each of the case companies. It is noteworthy that none of our cases exhibits all of the use cases at the same time.

	Communardo	IREKO	Capgemini	Deloitte	NAB
Discussion & Opinion	2.7%	17.7%	40.0%	41.3%	38.3%
Event Notifications	3.3%	4.3%	0.4%	8.5%	1.7%
Idea Generation	0.4%	3.1%	0.0%	5.8%	11.6%
Informal Talk	0.0%	2.3%	9.9%	4.4%	5.7%
Information Storage	2.9%	5.3%	0.0%	0.0%	0.0%
Input Generation	7.9%	7.8%	10.4%	13.5%	13.2%
Meeting Organisation	0.0%	18.0%	0.0%	0.0%	1.1%
Other	0.0%	0.0%	0.5%	0.4%	0.0%
Problem Solving	18.5%	4.1%	16.9%	10.9%	12.0%
Social Praise	5.2%	4.1%	6.6%	7.9%	13.3%
Status Update	12.8%	11.5%	13.9%	5.0%	3.0%
Work Coordination	46.3%	21.8%	1.6%	2.2%	0.2%
	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2: ESN use case proliferation in the five case companies

5 Discussion

5.1 Theory Development

Our cross-case analysis has yielded a list of eleven distinct ESN use cases. Since our cases cover a range of different use contexts we are confident that our list of ESN use cases is a good, comprehensive representation of the nature of communicative activity in Enterprise Social Networking (ESN). As such, these genres not only represent emergent use cases of ESN in general, but also allow us to reason about the differing nature of ESN in different contexts. Drawing on the profiles captured in table 2 we are able to derive similarities and differences between the cases regarding their context of use and the emergence of use cases. The five cases display a wide range of collaboration practices in software development, university research, consulting, auditing, or banking. Less obvious, but even more important, we find social interactions on different organisational levels: on a team level (Communardo), on a project level (IREKO), and enterprise-wide interactions (Capgemini, Deloitte, NAB). This allows us to derive our theory framework of contextual ESN usage profiles.

We begin by discussing differences between those two cases that have seen ESN used for work coordination. In the case of Communardo the team of software developers draws on the ESN to organise their day-to-day work on joint tasks, whereas in the IREKO case the platform is used for project work covering a longer time-span. As table 2 shows nearly half of the communication in the Communardo case (46.3 %) revolves around work coordination. In the IREKO case work coordination still accounts for 21.8%, while it hardly exists in the other three cases. Moreover, the software development team uses the ESN intensely to solve problems (18.5 %), whereas in the context of the research project IREKO this is found to a much lesser extent (4.1 %). On the other hand, in the IREKO case the ESN is intensively used for meeting coordination (18 %). Interestingly, during interviews IREKO users outlined that the tag #JourFixe is often used to collect agenda items prior to the meeting and then drawn upon to structure the meeting with the help of the ESN. Consequently, while the software developers use the ESN to directly solve problems, the researchers in IREKO have opted to collect these problems and solve them face-to-face in their weekly Jourfixe. In summary, Communardo provides an example of team-level task-based coordination in ESN, while IREKO is an example of an ESN-based project management practice.

At the same time, the other three ESN cases are remarkably similar to each other, while exhibiting a significant difference to the first two cases in their discursive nature. Firstly, the number of posts that are replies to other posts is much higher with around 65 % across the three cases of Capgemini, Deloitte and NAB (see table 1). Secondly, for all of these cases the amount of discussion and opinion messages is also much higher and at the same time strikingly similar in proportion (40 % / 41.3 % / 38.3 %). This can be explained by the fact that the teams in the first two cases are working more closely together and have established other means for discussion. In the three large enterprise cases the user group is larger, more heterogeneous and geographically spread with employees that often have never met before and thus need a forum for discussion and context building. At the same time in the Capgemini, Communardo and IREKO cases the platform is also used to provide status updates to a notable extend, compared to negligible uses at Deloitte and NAB (5% / 3%). On the other hand, the auditing, tax, and banking practices seem to be more routinized and require more exchange in sharing information (13.5 % / 13.2 %) and the discussion of diverse topics. Thus, ESN is basically used as a platform for networking, crowdsourcing and organisational learning. The latter is especially relevant to the NAB case, where idea sharing is found to a significant extent. A major practice in this case is the sourcing and discussion of ideas for innovating various aspects of the organisation, from administrative processes, over 'green' and sustainability issues to new product ideas.

In conclusion, our results clearly show that ESNs are appropriated by the user groups according to their specific work practices, which are then reflected on the platform. The differences in adoption, in the form of emerging usage practices, are not only reflective of the organisational context, but seem to

be catalysed by it. Also, the potential of such platforms only manifests itself when people make sense of and incorporate them into their day-to-day work routines. Table 3 illustrates the differences in ESN usage as identified from our analysis and constitutes our theory of contextual ESN usage. In the next section we reflect on ESN as a contextual phenomenon.

	Team-level ESN	Project-level ESN	Enterprise-wide ESN
Primary use cases	Work coordination Status updates Problem solving	Work coordination Discussion & opinion Meeting organisation	Discussion & opinion Problem solving Input generation
Secondary use cases	Input generation	Input generation Information storage	Informal talk Idea generation Event notifications
ESN as...	... social task coordination tool.	... social organisation tool.	... networking and crowdsourcing space.

Table 3. Theory of contextual ESN usage

5.2 ESN as a Contextual Phenomenon

Our results demonstrate that ESN as enabled by malleable, social technologies turns out to be quite different in different contexts. This phenomenon has been captured by the term technologies-in-practice before (Orlikowski & Iacono, 2000). Technologies when interpreted in the context of practices differ markedly. In our context, it is thus necessary to further qualify ESN as a technology-in-practice according to the particular practice it has been embedded in: team-task, project management or enterprise communication practices. Our theory offers a basis for future research into ESN in these different practices.

Moreover, our results show that ESN can suitably be conceptualised as information infrastructures, as “a shared, open (and unbounded) heterogeneous and evolving socio-technical system (which we call installed base) consisting of a set of IT and their user, operations and design communities” (Tilson et al., 2010, 748). An information infrastructure does not have a predefined goal, like other software applications, but may be used for various purposes and in various ways. Hence an information infrastructure needs to be interpreted and appropriated by its users and thus needs to be integrated into existing work practices. Thereby, an information infrastructure is embedded in social practices and is shaped by conventions of practice. Accordingly, Ciborra and Hanseth state that “the scope for control over an infrastructure can be limited, and management has to cope with a resource that they can govern only in part” (1998, p. 309). Thus, it is essential to view the technology within its social or organizational context and the work practices in which they are embedded (Ciborra, 2000). As such the technologies need to be appropriated by their users in a particular context, thereby becoming part of different practices when compared across contexts. Users need to explore, experiment with and thus figure out how to “place” these platforms within their local work practices (Riemer & Johnston, 2012). In this context our study creates a better understanding of these technologies and their benefits for organisational practices.

6 Conclusion

Triggered by the widespread success of social platforms in the public domain comparable platforms have also made fast inroads into organisations. At the same time we note that these platforms are

malleable technologies that do not lend themselves to specific forms of usage determined or prescribed by their features. Against this backdrop we have carried out a cross-case comparison of results from genre analyses in five ESN cases.

The presented use case catalogue provides a structured and cross-case overview of the variety of possible applications of ESN and a theory towards a better understanding of the ESN phenomenon in general. Given the nature of the use case catalogue as a framework for making sense of the ESN phenomenon, our theory can be classed as a theory for analysing (Gregor, 2006). Furthermore, the framework helped us expose and discuss the contextual differences of ESN in team, project and large enterprise contexts. This leads us to reason that the potential of ESN only manifests when people make sense of and incorporate the platforms into their day-to-day work practices. It also shows that similar contexts lead to the emergence of similar ESN use practices. In turn this means that what we find in our analyses as communicative practices on the platforms are a good reflection of the work practices they are implicated in.

Our study has important practical implications. Both the contextual application profiles exposed in tables 2 and 3 and the use case catalogue help decision makers and users to gain a better picture of the manifold possibilities of ESN and can serve as a starting point for organisational sense-making regarding the application of ESN. Our use case catalogue can be seen as tool to strike a balance between allowing for high degrees of flexibility and at the same time narrowing and guiding possible uses. We think that the discursive process of ESN implementation motivates a continuous learning and knowledge exchange process between platform users and decision-makers wanting to reap the benefits of social technologies within their organisations. The unforeseeable ways of appropriation imply an important role of transparent learning processes to reduce information uncertainty. To this end, our set of use cases can help management to learn from the experiences made by other companies.

Our findings are circumscribed by certain design choices. Firstly, whereas we have used a large set of data from five cases additional cases might still add more variety to our results. It might be useful to have further examples of other companies to verify the completeness and applicability of the use case catalogue. One such case context might be topic-centred communities of practice (Wenger, 1998). We assume that problem-solving and discussions might be an especially important use case for members of these communities. Secondly, our genre analysis approach can only capture one side of the use practice, the writing of messages on the platform, but not their reading and perception. Whereas to the best of our knowledge no study has yet investigated this side, it would be useful for gaining a more balanced understanding of the ESN phenomenon. One of the next steps might be to investigate the combination of online discourse (on the platforms) and offline discourse (discussions that are continued face-to-face or begin face-to-face and are continued later on the platform) by way of ethnographic research methods.

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